



Pearmtree Hill Solar Farm

Archaeological Management Strategy

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1 Introduction

1.1 Background

- 1.1.1. Peartree Hill Solar Farm (hereafter referred to as the 'Proposed Development') comprises the construction, operation (including maintenance) and decommissioning of a solar photovoltaic (PV) electricity generating and storage facility with an export capacity of up to 320 megawatts (MW) and associated infrastructure, as described within **Environmental Statement (ES) Volume 1, Chapter 3: Proposed Development Description [EN010157/APP/6.1]** and Schedule 1 of the **Draft Development Consent Order (DCO) [EN010157/APP/3.1]**.
- 1.1.2. The Proposed Development is located within the 'Order Limits', which set out the maximum extent within which the Proposed Development can be carried out and encompasses an area of approximately 891 hectares (ha) within East Riding of Yorkshire (the 'Site'), as shown on the **Location and Land Area Plan [EN010157/APP/2.1]**.
- 1.1.3. The Proposed Development consists of five areas of land (Land Areas B-F – there is no Land Area A) subdivided into Fields, interconnecting underground cables between the Land Areas, a 132kV underground cable route to National Grid Creyke Beck Substation (hereafter referred to as the 'grid connection cable route'), and sections of highway land. These are shown in **ES Volume 3, Figure 1.2: Land Areas and Cable Routes Plan with Field Numbering System [EN010157/APP/6.3]**.
- 1.1.4. The land on which the development is proposed is hereafter referred to as 'the Site'.

1.2 Purpose of this document

- 1.2.1. This document is not a Written Scheme of Investigation, as the exact scope of archaeological works to be required during the post-consent phases of the Proposed Development are currently unknown.
- 1.2.2. This Archaeological Management Strategy (AMS) sets out the proposed approach to addressing potential development impacts on archaeological remains during the post-consent phases of the Proposed Development, its aims and objectives, and the methodologies and standards to be used in undertaking any required archaeological works. Its purpose is to:

- Provide the framework and principles which any subsequent Written Schemes of Investigation must substantially accord with; and
- Provide sufficient information to archaeological contractors to enable them to tender for any required works.

- 1.2.3. Discussions with East Riding of Yorkshire Council & Hull City Council have been undertaken in preparing this AMS. Agreement has been reached on the need for post-consent geophysical survey and archaeological trial trenching of the grid connection and interconnecting cable routes; post-consent archaeological trial trenching of the solar PV modules; and post-consent archaeological monitoring of the installation of an access road and temporary compound in Land Area F which encroaches into the footprint of heritage asset HA3 (**Section 3.3**)
- 1.2.4. The document seeks to conform with current best practice, and to the guidance outlined in Management of Research Projects in the Historic Environment [**Ref. 7.11-1**], and the Chartered Institute for Archaeologists Standards and Guidance [**Refs. 7.11-2, 7.11-3, 7.11-4, 7.11-5, 7.11-6, 7.11-7 and 7.11-8**]. It sets out a proportionate approach to post-determination evaluation in line with the ClfA Standards and Guidance [**Ref. 7.11-6**] and the published National Planning Statement (NPS) EN-3 [**Ref. 7.11-9**] as well as a proportionate approach to post-determination mitigation. The document also draws on the guidance issued by East Riding of Yorkshire Council & Hull City Council [**Ref. 7.11-10**].

1.3 Definition of terms

- 1.3.1. Within this document, the following terms are referred to.

Term	Definition
Archaeological evaluation	Types of archaeological investigation whose aim is to provide more information about the nature, location, extent, date and rate of survival of in situ archaeological remains in order to inform the need for and scope of any further archaeological mitigation. Examples include geophysical survey and trial trenching
Archaeological mitigation	Types of archaeological investigation whose aim is to gather as much information about the archaeological remains before their disturbance or destruction by a proposed development, thus ensuring their 'preservation by record'. Examples include excavation and archaeological monitoring.
Archaeological Management	The overall approach to be taken to avoiding or minimising impacts to archaeology by the Proposed Development, taking into account the fact that, at the time of writing, the exact scope

Term	Definition
Strategy (AMS) (this document)	of archaeological works to be required during the post-consent phases of the Proposed Development is unknown. Subsequently, the AMS presents the overarching methodologies for all possible required works.
Preservation in situ	Methods of preventing physical damage to below-ground archaeological remains as a result of activities carried out as part of a proposed development.
Preservation by record	Methods of ensuring that the data which archaeological remains contain is not lost if preservation in situ is not possible. This often involves archaeological excavation and recording.
Written Scheme of Investigation	A document containing the precise scope and detailed methodology for one or more programmes of archaeological work (including excavation techniques, recording methods, and reporting and archiving strategies, as well as the standards that all works should adhere to) that must be approved by the relevant local planning authority before works can begin.
Updated Project Design (UPD)	An Updated Project Design (UPD) is an archaeological post-excavation document which sets out the results of archaeological fieldwork and assesses the need for detailed and/or specialist analysis of recovered remains - for example, carbon dating, residue analysis or specialist conservation. The purpose of a UPD is to identify the need for and best method(s) to extract as much information as possible out of the archaeological data collected during fieldwork. A UPD is not produced until all archaeological fieldwork is complete.

1.4 Location, topography and geology of the Site

- 1.4.1. The Site extends to a total area of c.891 ha, which lies within the Holderness Plain of the East Riding of Yorkshire, between the White Cross roundabout (A1035/Beverley Road) to the south of Leven and the City of Kingston-on-Hull. The Site is orientated roughly north-east to south-west and passes through the hamlet of Meaux.
- 1.4.2. The approximate centre of the Site is located at NGR 508302 439276, closest post code HU17 9SS. At its closest point, the Site lies c.1.8 km to the east of the centre of Beverley, c. 6.5 km to the north of the centre of Kingston-upon-Hull, c.200 m – c.300 m to the west of the villages of Arnold, Long Riston, Routh, Weel and Woodmansey. The hamlets, villages and suburbs of Catwick, Cottingham,

Dunswell, Kingswood, Leven, Orchard Park, Skirlaugh, Skidby, Thearne, Tickton and Wawne also surround the Site at between 300 m and 5 km distance.

- 1.4.3. The solar PV development and Battery Energy Storage System (BESS) are proposed to be erected within the Land Areas. Interconnecting cable routes will connect each Land Area. Several existing roads which will be used for site access are also included in the Order Limits (Whitecross Road, Carr Lane, Arnold Lane West and Black Tup Lane in Long Riston and Arnold; Meaux Lane in Routh; Meaux Road in Wawne; and Park Lane in Cottingham). The grid connection cable route will run from the south of Land Area E through the southern and western parts of Figham Common, turning to run southwards at the A164/A1174 roundabout near Bermondsey and continuing southwards to the west of Woodmandsey and over Long Lane and the Beverly Bypass. The grid connection cable route meets the National Grid Creyke Beck Substation at its eastern side.
- 1.4.4. With a few exceptions, the Site is bordered on all sides by agricultural land. The Site can be accessed at numerous points by public footpaths and the local road network. At a wider topographic scale, the Site is located within a relatively flat, low-lying, wet area of farmland, isolated farms or dwellings and minor road networks. Numerous drains of varying sizes run through and/or border the Site, including two small sections of the River Hull.
- 1.4.5. The underlying solid geology of the Site is recorded by the British Geological Survey (BGS) as Flamborough Chalk Formation. This is described by the BGS as 'White, well-bedded, flint-free chalk with common marl seams (typically about one per metre). Common stylolitic surfaces and pyrite nodules.' [Ref. 7.11-11 and Ref. 7.11-12]. Recorded superficial deposits within the Site include alluvium, Till and glaciofluvial deposits.
- 1.4.6. The BGS records several boreholes whose logs contain information on topsoil and superficial deposits within the footprints of Land Areas B and D and the grid connection cable route. Although other boreholes have been taken within the footprint of the grid connection cable route as well as around Wawne Grange (Land Area F), Meaux Grange (near Land Area D), and Springdale Farm (between Land Area E and Figham Common), these do not record topsoil or subsoil deposits or are confidential and could not be viewed [Ref. 7.11-11].
- 1.4.7. The borehole drilled within the footprint of Land Area B was located within Field B4 and recorded topsoil deposits of 0.46 m thickness and sandy silts and clays of 1.06 m thickness (BGS ID: 18538972 and Reference: TA14SW22). The boreholes taken within the footprint of Land Area D, around Meaux Abbey Farm, recorded topsoil deposits of 0.3 m – 0.5 m thickness overlying superficial geological deposits of sandy silts and clays of 1.5 m - 2.7 m thickness (BGS ID: 459385 and Reference: TA04SE15; BGS ID: 459393 and Reference: TA04SE23; BGS ID: 17280005 and Reference: TA04SE49). The boreholes from within the

footprint of grid connection cable route were located within Figham Common and recorded topsoil deposits of c.0.2 m – 0.46 m thickness overlying peat deposits of c.0.44 m – 1.2 m thickness (BGS ID: 18536431 and Reference: TA03NE197 and BGS ID: 18542434 and Reference: TA03NE225) [Ref. 7.11-11].

1.5 Archaeological and historical background

- 1.5.1. The below summary is taken from **ES Volume 4, Appendix 9.1: Archaeological Desk-Based Assessment [EN010157/APP/6.4]**.

Palaeolithic – Bronze Age

- 1.5.2. During the Palaeolithic period, the Site lay within a landscape of ice sheets and glacial lakes. Global warming during the Mesolithic period caused the Humber wetlands to be formed. This wetland environment has characterised the landscape of the Site to the present day. The population level was generally low and no definite settlement sites have yet been identified.
- 1.5.3. The earliest known human activity within the Site dates to the Bronze Age and takes the form of the cropmarks of barrows, enclosures and a tumulus (HER MHU6618 and HER MHU833) and the findspot of an axe (HER MHU15210).
- 1.5.4. Six Scheduled Monuments of Neolithic – Bronze Age date (NHLE 1014000, NHLE 1007731, NHLE 1008038, NHLE 1013990, NHLE 1013991 and NHLE 1013992) relating to funerary practices, several non-designated heritage assets of possible Neolithic – Bronze Age barrow sites and several findspots of Mesolithic and Neolithic artefacts and are present within a 5 km and 1 km radius of the Site.

Iron Age and Romano-British

- 1.5.5. Iron Age and Romano-British activity is attested throughout the Holderness Plain by the cropmarks, geophysical anomalies and excavated remains of ladder settlements, isolated farmsteads, droveways and field systems.
- 1.5.6. Known heritage assets within the Site are exclusively non-designated and consist of the cropmarks of enclosures, ditches and field systems (HER MHU22248, HER MHU3591, HER MHU6706 and HER MHU6713) and three excavated pits (HA17).
- 1.5.7. Eight Scheduled Monuments relating to funerary practices or agriculture (NHLE 1013993, NHLE 1013994, NHLE 1013995, NHLE 1013996, NHLE 1013997, NHLE 1013998, NHLE 1013999 and NHLE 1014000) as well as 30 non-

designated heritage assets of Iron Age or Romano-British date are present within 5 km and 1 km of the Site.

Early Medieval and Medieval

- 1.5.8. During the early medieval and medieval periods, much if not all of the landscape within which the Site is situated was under the control of either Beverley Minster or Meaux Cistercian Abbey. The main human activity during these periods within the Site appears to have been arable cultivation and livestock grazing. Religious institutions such as Meaux Cistercian Abbey spearheaded the creation of drainage systems throughout the Site, most notably Monk Dyke, which runs through the middle of Land Area B and the western side of Land Area C.
- 1.5.9. No known heritage assets of early medieval date and two known heritage assets of medieval date are present within the Site. The two known heritage assets are non-designated and comprise the theorised site of Meaux Deserted Village (HER MHU1514) and an area of ridge and furrow agriculture (HER MHU8202).
- 1.5.10. Early medieval and medieval activity within a 5 km radius of the Site is concentrated on the settlements which currently surround it. Known heritage assets include 18 Scheduled Monuments of settlements, religious institutions (including the site of Meaux Cistercian Abbey (NHLE 1008039), which lies 10 m to the north of Land Area F), isolated high-status residential sites, market crosses, and sanctuary limit stones 30 Grade I – II Listed Buildings; six Conservation Areas; and 74 non-designated heritage assets relating to settlement, travel and transport, agriculture and material culture.

Post-Medieval

- 1.5.11. During this period, the land within the Site continued to be utilised primarily for agriculture. To enable this, the drainage systems introduced during the medieval period were expanded upon and extended; the most important were the Holderness Drain and the Leven Canal. Informal and formal enclosure of common lands within and outside of the Site also characterised this period.
- 1.5.12. There are 18 known heritage assets of post-medieval date present within the Site, all non-designated. These are:
- the Hull to Scarborough Railway (HER MHU8811);
 - four demolished or extant bridges (HER MHU12271, HER MHU12310, HER MHU13215 and HER MHU13242);
 - site of one sluice (HER MHU13283);
 - the site of Routh Bar toll gate (HER MHU13278);
 - the site of a post-medieval 'engine' (HA16);

- the site of a duck decoy (HA10);
- Five sites of probable extraction pits or ponds (HA6, HA9, HA11, HA12 and HA14);
- The route of a probable drain (HA15);
- The site of a fox covert (HA5);
- Numerous lost field boundaries (HA7); and
- Areas of medieval or post-medieval ridge and furrow agriculture (HA13).

1.5.13. Post-medieval activity within a 5 km and 1 km radius of the Site is concentrated on the settlements which currently surround it. Known heritage assets include two Scheduled Monuments (Meaux Duck Decoy (NHLE 1015305, which lies between Fields E5, E7 and E9), and Risby gardens and hall (NHLE 1018600); two Grade II Registered Parks and Gardens; 573 Grade I – II Listed Buildings; 23 Conservation Areas; and 163 non-designated heritage assets relating to settlement, travel and transport, agriculture, water management, small-scale industry and material culture.

Modern

1.5.14. There is one known heritage asset of this date, non-designated, within the Site. This is HER MHU22295, the site of a WW2 searchlight battery.

1.5.15. Modern activity within a 5 km and 1 km radius of the Site is concentrated on the settlements which currently surround it. Known heritage assets consist of one Scheduled Monument (Heavy Anti-aircraft gunsite NHLE 1019186), 35 Grade II* – II Listed Buildings, five Conservation Areas and five non-designated heritage assets relating to agriculture and military infrastructure.

Unknown Date

1.5.16. There are 17 heritage assets of unknown date within the Site and 44 such assets within 1 km of the Site. These are all non-designated.

1.5.17. Within the Site, these comprise:

- Ten singular or groups of enclosures, field and ditch systems and circular features of unknown but likely prehistoric date identified through excavation, aerial photography or geophysical survey (HER MHU1498, HER MHU24331, HER MHU3590, HER MHU3593, HER MHU3595, HER MHU3597, HER MHU3628, HER MHU6600, HA2 and HA3);

- Several discrete or groups of anomalies of unknown but possible archaeological origin and likely prehistoric date identified through geophysical survey of the Order Limits (HA4); and
- Six ditches, seven pits and a posthole found during archaeological trial trenching of the Order Limits (HA18).

1.5.18. Heritage assets of unknown date present within 1 km of the Site consist of the cropmarks of enclosures, ditches, trackways, hut circles, circular or linear features, and ring ditches or findspots of undated artefacts.

1.6 Summary of archaeological investigations carried out in support of the Proposed Development to date

1.6.1. A programme of geophysical survey (**ES Volume 4, Appendix 9.2: Geophysical Survey Report [EN010157/APP/6.4]**) and targeted evaluation trial trenching (**ES Volume 4, Appendix 9.3: Archaeological Trial Trenching Report [EN010157/APP/6.4]**) have been carried out within the Order Limits in support of this DCO application.

Geophysical survey

1.6.2. The geophysical survey identified two areas of locally high archaeological potential, consisting of likely enclosures within Fields B4 and B8 (HA2) and a possible sub-rectangular enclosure containing two ring ditches with a larger third ring ditch located immediately outside in Fields F6, F9, F10 and F11 (HA3). The correlation between the identified areas of archaeological potential and the zones of patches of sand and gravel or till superficial deposits was interpreted as a genuine reflection of the suitability of the Site for historic occupation.

1.6.3. Three anomalies possibly identifying localised burning have also been mapped across the Site to the east of Meaux Lane, and an anomaly of uncertain origin was recorded in the location of 'ruins' detailed on historic maps close to the River Hull. No anomalies relating to Meaux Deserted Medieval Village (HER MHU1514) were identified.

1.6.4. The geophysical survey also recorded a large number of natural or geological features and anomalies of agricultural origin throughout the Site, such as systematic patterns of field drains, ploughing trends (both historic ridge and furrow) and modern, former field boundaries and ponds.

Targeted archaeological evaluation trial trenching

- 1.6.5. The targeted evaluation trial trenching was carried out within or close to the footprints of the following specific elements of the Proposed Development
- Project Substation East;
 - Project Substation West;
 - Battery Energy Storage Systems (BESS);
 - Spares and customer switchgear containers;
 - Construction compounds; and
 - Internal roads.
- 1.6.6. Of the 92 trenches proposed to be excavated during the programme of targeted archaeological evaluation trial trenching, only 83 trenches were ultimately excavated. This was due to poor weather conditions, the presence of unknown services, waterlogging and a delay to harvesting within some areas of the Site. The nine trenches which could not be excavated were Trenches 37 - 43 in Land Area D and Trenches 87 and 89 in Land Area E (see **Appendix A**).
- 1.6.7. No trial trenching was carried out within the footprints of the solar PV modules, interconnecting cable routes or the grid connection cable route.
- 1.6.8. Archaeological features were identified in 14 of the 83 excavated trenches. Only two trenches contained dateable features in the form of Iron Age – Romano-British pits (HA17). The remaining 12 trenches contained undated ditches, pits and postholes (HA18); of these, only one contained any finds (a sheep or goat tibia).
- 1.6.9. The key conclusions of the trial trenching were:
- The recovered pottery was typical of later Iron Age and Romano-British sites of the River Hull Valley and were of a rural type;
 - Although the trial trenching indicated that there was some human activity within the Site during the 1st – 3rd centuries, there was no clear evidence for settlement itself. The quantities of pottery recovered from two of the pits may indicate that this was deliberately dumped material, perhaps used as rubbish pits for nearby settlement activity, or were part of larger features such as wells or waterholes;
 - The recovered pottery suggests that human activity within the Site significantly decreased or did not occur during the 4th century. This is at odds with the regional data, which shows a lack of activity during the

1st and 2nd centuries and the increase or commencement of activity during the 3rd and 4th centuries;

- The small amount of animal remains recovered indicates that animals were not being routinely raised or butchered within the Site, at least in large numbers; and
- Some of the anomalies recorded by the geophysical survey have been proven to be archaeological in origin, attesting to the general veracity of the geophysical survey results.

2 Proposed archaeological management strategy

2.1 Proposed approach

- 2.1.1. Known and currently unknown archaeological remains within the Site will be managed through a staged programme of post-consent archaeological evaluation and mitigation work whose aim will be to either preserve in situ or, where this is not possible, preserve by record. Preservation in situ will be the preferred option in all cases.
- 2.1.2. The archaeological evaluation (the first stage) will provide further information as to the location, extent and importance of the archaeological resource within the Order Limits, from which appropriate strategies for preservation in situ or preservation by record can be identified.
- 2.1.3. The archaeological work (the second stage) will record archaeological remains within the Order Limits at a level appropriate to their importance in instances where preservation in situ is not possible.
- 2.1.4. It is assumed that impacts to below-ground archaeological remains and therefore the potential need for archaeological mitigation will only occur during the construction phase.
- 2.1.5. No archaeological mitigation is proposed during the decommissioning phase as it is assumed that the only activity which may disturb archaeological remains is the removal of the solar PV modules, but that disturbance would be avoided through the removal of the piles at the same angle as they were inserted. If this changes, the AMS may need to be amended. Measures will be included in the Decommissioning Environmental Management Plan that require that this is kept under review.

2.2 Research questions

- 2.2.1. Based on the known archaeological and historic baseline of the Site and the results of the archaeological investigations undertaken within the Order Limits (**Section 1.4**), it is proposed that future archaeological investigations seek to address the following agenda topics of the Yorkshire Archaeological Research Framework [**Ref. 7.11-13**]:

- The chronology of landscape enclosure in the prehistoric and Romano-British periods, for example, gathering dating evidence from the undated cropmarks present within the Site;
- The development of Iron Age habitation sites, for example through stratigraphic evidence, pottery typologies and scientific analysis of ceramic assemblages;
- The nature and chronology of the Iron Age – Romano-British transition, and the way in which the Iron Age peoples incorporated (or did not incorporate) the Romano-British culture into their lives;
- The nature of Romano-British social interaction and the character of Romano-British occupation in the region, for example through analysis of ceramic assemblages; and
- The character of the social and economic relations which define the medieval period, such as those between ecclesiastical and lay populations, and analysis as to the extent to which these interactions were governed by the township structure or by considerations of access to landscape resources such as minerals, pasture and transport infrastructure.

2.3 Mitigation agreed to date

2.3.1. The requirement for the following mitigation activities has been agreed with the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council.

Mitigation Activity	Stage Required	Location in Outline AMS where methodology is discussed	Dependencies
Post-consent geophysical survey of interconnecting and grid connection cable route	Pre-construction	N/A	None
Post-consent trial trenching to target the solar PV modules, underground cable routes and Fields unable to be trenched	Pre-construction	Section 3.2	Cannot be carried out prior to issue of geophysical survey results

Mitigation Activity	Stage Required	Location in Outline AMS where methodology is discussed	Dependencies
during pre-determination trial trenching			
Post-consent archaeological monitoring of the installation of an access road and temporary compound in Land Area F which encroaches into the footprint of heritage asset HA3	During construction	Section 3.4	None

Post-consent archaeological evaluation

Geophysical survey

- 2.3.2. The grid connection cable route and interconnecting cable routes have not yet been subject to geophysical survey. As agreed with the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council, this should be carried out prior to construction commencing and prior to the trial trenching of the grid connection cable route and interconnecting cable routes. The results of the geophysical survey will inform the sample size and strategy employed for the trial trenching.
- 2.3.3. The scope of the geophysical survey must be set out in a Written Scheme of Investigation for geophysical survey approved by the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council.
- 2.3.4. The Written Scheme of Investigation will conform to the standards and guidance laid out in the Chartered Institute for Archaeologists (CIfA) Standard and Universal Guidance for archaeological evaluation [Ref. 7.11-3 and Ref. 7.11-6] and their standards and guidance for geophysical survey [Ref.7.11-8]. It will:
- Identify the aims and objectives of the geophysical survey;
 - Summarise the archaeological and historical background, including the results of the work undertaken to date and how these have informed the proposed methodology;
 - Detail the proposed methodologies that will be implemented and form the central basis by which the investigation can be measured;

- Provide details on the provision of Site welfare, plant equipment, in accordance with archaeological requirements and relevant Health and Safety legislation as appropriate;
- Include details of a proposed timetable/programme for geophysical survey, post-excavation and reporting following completion of works;
- Detail proposed archiving;
- Detail the company Health and Safety Policy, evidence of insurance and a risk assessment for the works; and
- Detail any external specialists and other third parties to be used in the preparation of the fieldwork reports.

Trial trenching

- 2.3.5. Following any geophysical survey, a programme of trial trenching must be carried out within the footprints of the solar PV modules, the interconnecting cable routes, the grid connection cable route and those trenches in Land Areas D and E which were not able to be excavated during the pre-determination evaluation trial trenching (Trenches 37 - 43 in Land Area D and Trenches 87 and 89 in Land Area E).
- 2.3.6. The scope of the trial trenching must be set out in a Written Scheme of Investigation for evaluation trial trenching approved by the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council.
- 2.3.7. The Written Scheme of Investigation will conform to the standards and guidance laid out in the Chartered Institute for Archaeologists (CIfA) Standard and Universal Guidance for archaeological evaluation **[Ref. 7.11-3 and Ref. 7.11-6]**. It will:
- Identify the aims and objectives of the archaeological trial trenching;
 - Summarise the archaeological and historical background, including the results of the work undertaken to date and which have informed the proposed methodology;
 - Detail the proposed methodologies that will be implemented and form the central basis by which the investigation can be measured;
 - Provide details on the provision of site welfare, plant equipment, in accordance with archaeological requirements and relevant Health and Safety legislation as appropriate;
 - Include details of a proposed timetable/programme for archaeological trial trenching, post-excavation and reporting following completion of works;

- Detail proposed archiving;
- Detail the company Health and Safety Policy, evidence of insurance and a risk assessment for the works; and
- Detail any external specialists and other third parties to be used in the preparation of the fieldwork reports.

Archaeological monitoring and recording (watching brief)

- 2.3.8. Groundworks carried out during the installation of an internal road and temporary compound in Land Area F, which encroaches into the footprint of heritage asset HA3, should be monitored by an appropriated qualified archaeologist. Such monitoring will be agreed in advance with the Applicant and the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council following a review of the post-consent evaluation results.
- 2.3.9. Following consultation and agreement with the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council it is proposed that where monitoring has not identified archaeological remains, the watching brief ceases and that an agreed area will be handed directly to the Principal Contractor.
- 2.3.10. These works would be subject to the standards and guidance laid out in the CIfA Standard and Universal Guidance for archaeological monitoring and recording [Ref. 7.11-4 and Ref. 7.11-7].
- 2.3.11. It is possible that the detailed methodology for these works can be included within the Written Scheme of Investigation for the archaeological trial trenching (see above) or the archaeological mitigation (see **Section 3.5** below). If this is not possible, a separate Written Scheme of Investigation should be produced for these works.

2.4 Methods for preservation in situ

- 2.4.1. If the post-consent archaeological evaluation identifies archaeological remains of significance (i.e. those of high (national) importance or that are particularly sensitive to piling, e.g. waterlogged deposits), the design and/or location of the solar PV modules, cabling, access tracks and landscaping may be subject to minor amendment within the scope of the Development Consent Order and the **Design Parameters Document [EN010157/APP/5.8]**. This may include micro-siting of infrastructure, engineering solutions such as the use of concrete footing and/or trays which would lie on the ground surface, or the implementation of planting and land management regimes that would prevent further disturbance via ploughing. Preservation in situ will always be sought as the preferred option.

- 2.4.2. The design parameters of the Proposed Development (see **Table 3.2 of ES Volume 1, Chapter 3: Proposed Development Description [EN010157/APP/6.1]**) allow for an alternative mounting structure for the solar PV modules, in the form of ballast slabs which would sit on the surface rather than penetrate the ground (subject to the extent of any areas and discussions with the Environment Agency and Lead Local Flood Authorities).
- 2.4.3. Where preservation in situ of archaeological remains is not possible due to other project constraints a programme of mitigation / preservation by record will be carried out as detailed in **Section 3.5** below.

2.5 Methods for preservation by record

- 2.5.1. Following the completion of the archaeological works outlined in **Section 3.3** above and if preservation in situ is not possible, a new Written Scheme of Investigation will be prepared to address any elements of additional mitigation required. Any Written Scheme of Investigation prepared will be substantially in accordance with principles set out in this AMS and approved by East Riding of Yorkshire & Hull City Council in accordance with the Requirements in the DCO.
- 2.5.2. Any Written Scheme of Investigation prepared will conform to the Standards and Universal Guidance of ClfA [**Refs. 7.11-2, 7.11-4, 7.11-5 and 7.11-7**]. It will:
- Identify the aims and objectives for each element of the archaeological works;
 - Summarise the archaeological and historical background, including the results of the work undertaken to date;
 - Detail the proposed methodologies that will be implemented and form the central basis by which the investigation can be measured;
 - Provide details on the provision of site welfare, plant equipment, in accordance with archaeological requirements and relevant Health and Safety legislation as appropriate;
 - Include details of a proposed timetable/programme to archaeological works, post-excavation and reporting following completion of works;
 - Detail proposed archiving;
 - Detail the company Health and Safety Policy, evidence of insurance and a risk assessment for the project; and
 - Detail any external specialists and other third parties to be used in the preparation of the fieldwork reports.
- 2.5.3. The detailed proposed methodology of any Written Scheme of Investigation produced will be prepared in consultation with the Development Management

Archaeologist for East Riding of Yorkshire Council & Hull City Council and will be substantially in accordance with this AMS.

- 2.5.4. At this stage, the need for and scope of archaeological mitigation works is not known. Therefore, the standards and methodologies to be followed for all likely eventualities have been presented below.
- 2.5.5. It is believed at this stage that preservation by record would most likely be most appropriately achieved through:
- Strip Map and Sample/ Archaeological Excavation prior to construction activities; and/or
 - Archaeological Monitoring and Recording (Watching Brief) during construction activities

Strip map and sample/ archaeological excavation

- 2.5.6. Where strip, map and sample and/or archaeological excavation is required, the extent of areas requiring a strip, map and sample or archaeological excavation will be agreed (with consideration of the results of the post-consent evaluation works) with the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council, prior to construction commencing. This will be presented in a Written Scheme of Investigation which will be submitted to the East Riding of Yorkshire & Hull City Council for approval.
- 2.5.7. The following areas may be suitable for excavation depending on the results of post-consent evaluation:
- Targeted areas within solar arrays where evaluation indicates archaeological remains of high sensitivity; and/ or
 - Targeted areas within grid connection cable route where evaluation indicates archaeological remains of high sensitivity.
- 2.5.8. An outline of the specific methodology for any strip, map and sample or archaeological excavation that may be required is set out below.
- 2.5.9. The locations of all areas will be accurately set out, surveyed and excavated and tied to the Ordnance Survey National Grid and Ordnance datum. Topsoil and any other overburden will be stripped from the agreed areas by suitable plant for mechanical excavation to expose any archaeological remains.
- 2.5.10. All mechanical excavation will be undertaken under the direct and continuous supervision of an experienced archaeologist. Mechanical excavation will cease when the first archaeologically significant horizon is encountered, or when the

absence of any such horizon has been adequately demonstrated to the satisfaction of the Applicant and/ or the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council.

- 2.5.11. Following the removal of the topsoil and any other overburden, the area will be inspected for archaeological features, and in all areas containing and archaeological remains, particularly those with a significant concentration of features, will be manually cleaned by the Archaeological Contractor.
- 2.5.12. The requirement to metal detect the spoil heaps and excavated areas, as well as collection of unstratified artefacts or small finds exposed during manual cleaning, will be reviewed and agreed in advance with the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council.
- 2.5.13. The exact percentage of features to be archaeologically investigated will be agreed with the Development Management Archaeologist for East Riding of Yorkshire Council during the production of the Written Scheme of Investigation for post-determination archaeological mitigation.
- 2.5.14. In addition to all stratigraphic relationships, and where appropriate and necessary, sufficient soil samples for dating evidence and ecofactual analysis will be taken.
- 2.5.15. These works would be subject to the ClfA Standard and Universal Guidance for archaeological excavation [**Ref. 7.11-2** and **Ref. 7.11-5**].

Archaeological monitoring and recording (watching brief)

- 2.5.16. Certain intrusive groundworks carried out during construction may be suitable for monitoring by an appropriately qualified archaeologist. Such monitoring will be agreed in advance with the Applicant and the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council following a review of the post-consent evaluation results.
- 2.5.17. Intrusive groundworks associated with the construction of the Solar PV development in areas where archaeological remains are found during the post-consent archaeological evaluation detailed in **Section 3.3** are anticipated to be suitable for archaeological monitoring and recording.
- 2.5.18. Intrusive groundworks associated with the construction of the substations, cable routes, compounds, BESS and internal roads of the Proposed Development where archaeological remains have been identified during pre- and post-consent archaeological evaluation (see **Section 2.6** and **3.3**) may be suitable for archaeological monitoring and recording depending on the results of post-consent trial trenching.

- 2.5.19. It is proposed that intrusive groundworks associated with the construction of the substations, cable routes, compounds, BESS and internal roads of the Proposed Development where archaeological remains are not identified during pre- and post-consent archaeological evaluation (see **Section 2.6** and **3.3**) are not archaeologically monitored, as it would be very unlikely that any archaeological remains would be present in situ in these areas.
- 2.5.20. The installation of solar PV module foundations would not be suitable for archaeological monitoring and recording as these would either be piled or would use non-intrusive methods for construction.
- 2.5.21. In the event that archaeological remains are encountered during monitoring, consultation with the Applicant and the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council would be required, and sufficient time allowed for proportionate excavation and recording of the remains prior to the recommencement of the relevant construction activity.
- 2.5.22. Following consultation and agreement with the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council it is proposed that where monitoring has not identified archaeological remains, the watching brief ceases and that an agreed area will be handed directly to the Principal Contractor.
- 2.5.23. These works would be subject to the standards and guidance laid out in the ClfA Standard and Universal Guidance for archaeological monitoring and recording [**Ref. 7.11-4** and **Ref. 7.11-7**].

General methodologies for all required archaeological mitigation

- 2.5.24. The following methodologies are applicable to both the archaeological monitoring and archaeological excavation and will be reflected in any Written Scheme of Investigation (s)

Roles and responsibilities

- 2.5.25. It is the responsibility of the Principal Contractor to secure a suitably qualified archaeological contractor in a timely fashion to carry out the required archaeological works.
- 2.5.26. It is anticipated that the Principal Contractor will provide all necessary welfare, site security, plant, and attendances relevant to the archaeological works.
- 2.5.27. The appointed Archaeological Contractor will prepare the Written Scheme of Investigation(s) and any risk assessments and method statements prior to

construction commencing in consultation with the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council.

- 2.5.28. The appointed Archaeological Contractor will provide suitably qualified and experienced personnel to undertake the archaeological works and will carry out the fieldwork, reporting and archiving. Depending on the nature of the required archaeological fieldwork, an Archaeological Clerk of Works may be required and, if so, should be provided by the appointed Archaeological Contractor.
- 2.5.29. Appropriately experienced specialists will provide relevant on-site and post excavation (assessment and analysis) specialist support as required.

Quality assurance

- 2.5.30. The appointed Archaeological Contractor should be a Registered Organisation with the Chartered Institute for Archaeologists (CIfA). All archaeological works must be supervised by appropriately qualified professionals with relevant experience, who are members of the CIfA at a commensurate level.
- 2.5.31. The Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council must be informed of commencement of the archaeological work prior to site works beginning. Access to the Site should be afforded to the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council for monitoring purposes.

Programme

- 2.5.32. Each Written Scheme of Investigation produced, to be agreed between the Applicant, the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council and the Archaeological Contractor prior to commencement of archaeological works, will include a programme for the archaeological works to which that Written Scheme of Investigation relates to. The programme will detail the proposed start and end dates for onsite works, as well as the proposed duration per mitigation area. The programme will also account for any post-excavation assessment and reporting.

Health and safety

- 2.5.33. All work will be carried out in accordance with the Health and Safety at Work etc. Act 1974 and the Management of Health and Safety Regulations 1992, and all other relevant Health and Safety legislation, regulations and codes of practice in force at the time for the fieldwork.

- 2.5.34. Prior to commencement of the archaeological works, a risk assessment and method statement for the work will be prepared and submitted to the Applicant for review and acceptance. A copy can be issued to East Riding of Yorkshire Council & Hull City Council if required.
- 2.5.35. Personal Protective Equipment requirements will be subject to review by the Applicant; however, these will be in line with Health and Safety requirements and will be confirmed following the appointment of an Archaeological Contractor.

Access and setting out

- 2.5.36. The appointed Archaeological Contractor will be permitted access to the Site, following identification of relevant hazards, restrictions, permits and relevant qualifications. Access will be arranged by the Applicant in advance of all archaeological works.
- 2.5.37. The location of each area subject to evaluation trial trenching and excavation will be accurately set out, and in those areas where monitoring has identified an archaeological resource, surveyed and tied into the Ordnance Survey National Grid and Ordnance datum.

Machine and hand excavation

- 2.5.38. Machine excavation will be under the instruction of a sufficiently experienced and qualified archaeologist, with mechanical excavators equipped with a toothless ditching bucket and under constant archaeological supervision.
- 2.5.39. The archaeological features and deposits encountered will be excavated by hand, and hand cleaning will also replace mechanical excavation in all instances where very sensitive features or finds are encountered to prevent unnecessary damage.
- 2.5.40. Exposed archaeology must be investigated sufficiently to establish its nature, extent and date, unless deemed to be of sufficient importance to require preservation in-situ, in which case the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council should be contacted to discuss any additional measures. Sampling of archaeological features will be dependent on feature type but will be sufficient to enable a basic understanding of the feature.
- 2.5.41. The depth and complexity of archaeological features and deposits within each area exposed will be ascertained, unless Health, Safety and Environment constraints deem otherwise. Where features cannot be hand excavated, the Applicant and the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council will be consulted.

Recording and sampling

- 2.5.42. All excavated archaeological contexts will be recorded in full through provision of detailed written context records, which will include details of extent, location, relationships, samples, finds, and cross-references to any relevant contexts.
- 2.5.43. All features will be planned at an appropriate scale, either digitally or by hand, as well as feature cross sections, and photographed accordingly. These plans and the photographic record will be presented in any final reporting.
- 2.5.44. In addition, all finds and environmental samples will be retained and recorded in order to provide dates and assist in the interpretation of form and function of any archaeological features or deposits identified.
- 2.5.45. All finds and samples will be collected and treated in accordance with the relevant guidance, including:
- ClfA's Guidance for the collection, documentation, conservation and research of archaeological materials **[Ref. 7.11-14]**;
 - Museums and Galleries Commission's Standards in the Museum Care of Archaeological Collections **[Ref. 7.11-15]**; and
 - Environmental Archaeology: a guide to theory and practice of methods, from sampling and recovery to post-excavation **[Ref. 7.11-16]**.

Human remains

- 2.5.46. Any discovered human remains should in the first instance be left in-situ, covered and protected. The Applicant should be informed immediately of such a discovery. The Applicant will inform East Riding of Yorkshire Council & Hull City Council and the local Coroner.

Treasure

- 2.5.47. In the event of discovery of artefacts covered or potentially covered by Treasure Act 1996, these will be removed and reported to the Applicant who will inform the local Coroner according to the procedures relating to the Treasure Act 1996, East Riding of Yorkshire Council & Hull City Council and the Finds Liaison Officer.

Post-excavation analysis and reporting

- 2.5.48. It is anticipated that each stage of archaeological fieldwork (geophysical survey, evaluation trial trenching, strip, map and sample excavation (if applicable) and archaeological monitoring) will require separate post-excavation analysis and reporting.

- 2.5.49. A single report is anticipated to be required for the geophysical survey, evaluation trial trenching and archaeological monitoring. If archaeological mitigation takes the form of an excavation (strip, map and sample or otherwise), two stages of reporting may be required. The initial stage could take the form of a post-excavation assessment and Updated Project Design document, with the secondary stage being the full analysis carried out in line with the methodology agreed in the Updated Project Design document. Publication of the results of the mitigation stage of works may also be required, either as a journal article or a monograph.
- 2.5.50. The final post-excavation and reporting requirements and methodology will be presented in the Written Scheme of Investigation (s) produced for each stage of archaeological fieldwork.
- 2.5.51. Post-excavation analysis and reporting will be undertaken in accordance with the requirements of the ClfA's Standard for archaeological excavation [Ref. 7.11-2], Universal Guidance for archaeological excavation [Ref. 7.11-5] and Standard and guidance for the collection, documentation, conservation and research of archaeological materials [Ref. 7.11-14].
- 2.5.52. Each report will be submitted in the first instance for review/ comment to the Applicant and the Development Management Archaeologist for East Riding of Yorkshire Council & Hull City Council and any other Specialists (e.g., Historic England) as required. In finalising the reports, the Archaeological Contractor will take into account any comments made and remedy any faults identified prior to the finalised reports being submitted for condition discharge.

Archive preparation and deposition

- 2.5.53. Adequate resources will be provided during fieldwork to ensure that records adhere to the ClfA's Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives [Ref. 7.11-17] and the guidance of East Riding Museums, the collecting repository [Ref. 7.11-18].
- 2.5.54. Immediately upon completion of the finalised report, the report and any data or other documentation produced during the post-excavation assessment process will be integrated into the site archive.
- 2.5.55. The results will be uploaded onto the online OASIS form at <http://oasis.ac.uk/> [Ref. 7.11-19] and once the reporting is in the public domain by submission to the Humber Historic Environment Record and Historic England National Record of the Historic Environment (NRHE). East Riding of Yorkshire Council & Hull City Council will validate the appropriate OASIS form.

3 References

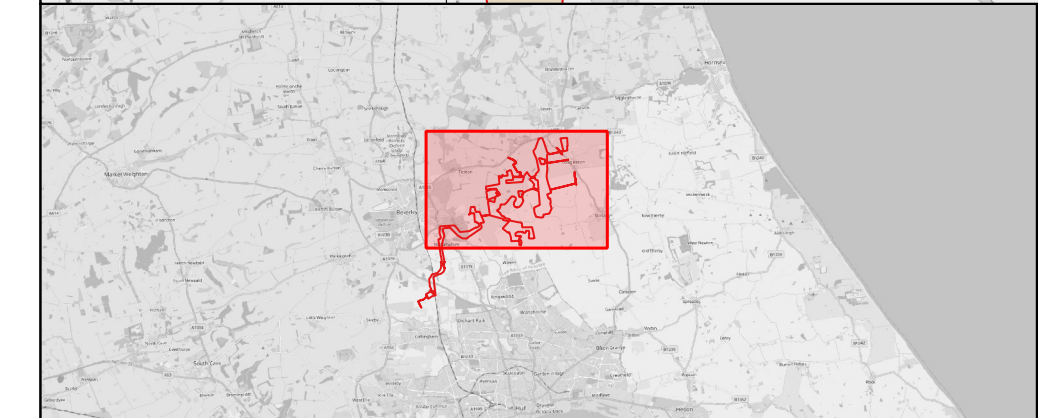
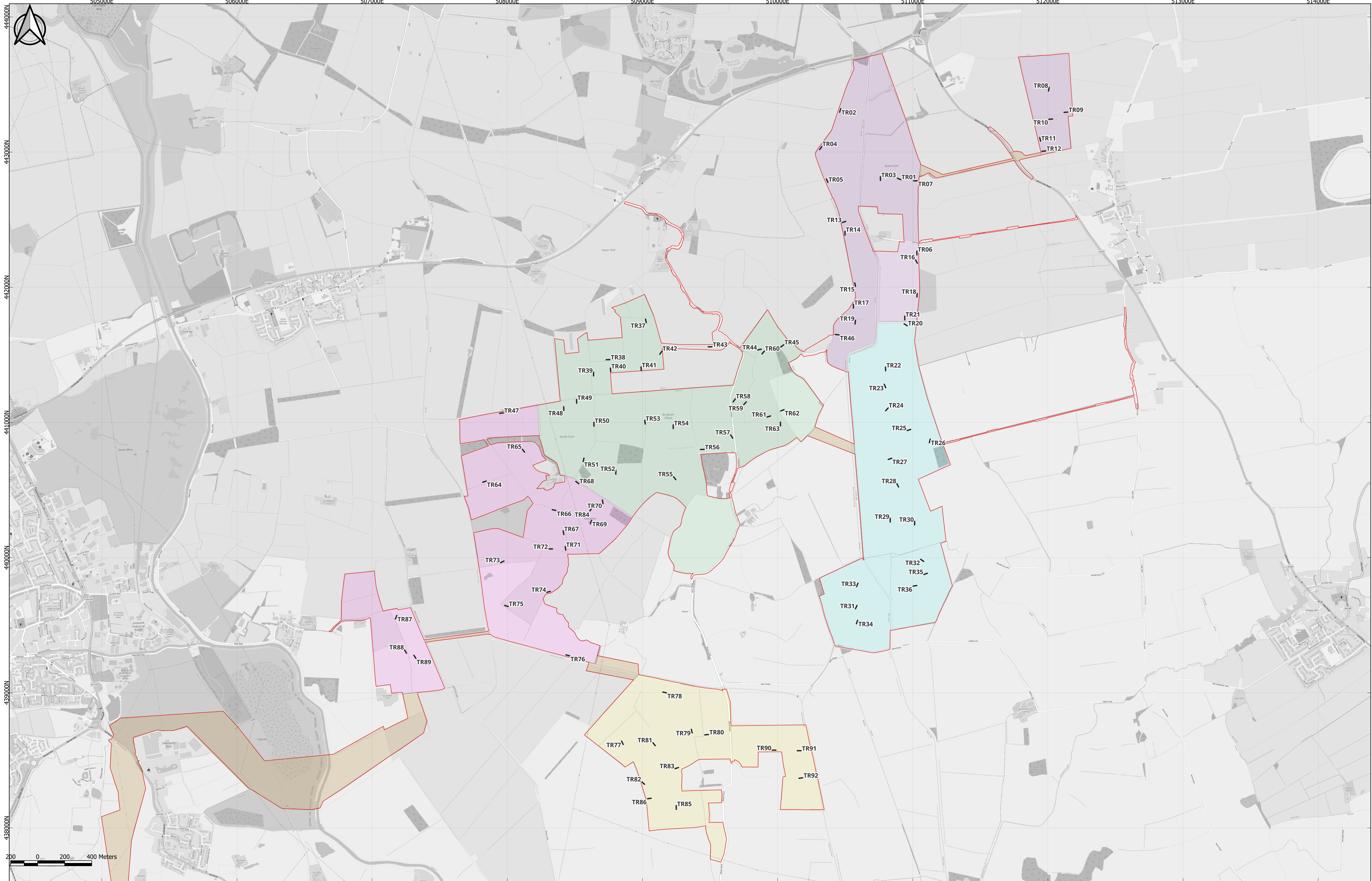
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APPENDIX A Location of excavated and unexcavated trial trenches



Key

- Order Limits
- Land Area outlines
 - Land Area B
 - Land Area C
 - Land Area D
 - Land Area E
 - Land Area F
- Proposed cable routes
- Trial trenches

Notes:

P01	14/02/2025	EI	NM	LY	AT
App	Date	By	Chkd	Appd	Authd

Client

RWE

Designer

RSK

Project Name

Peartree Hill Solar Farm

Drawing Title

Environmental Statement Volume 7, Chapter 7.11 Appendix A: Location of excavated and unexcavated trial trenches

SHEET 1 OF 1

Scale at A1

1:12800

Status

DCO Application

PINS Number

EN010157/APR/7.11

Rev

P01

Coordinate System:

British National Grid

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